

September 15, 2003

TO: Internal File

THRU: Stephen J. Demczak, Environmental Scientist III/Engineering, Team Lead

FROM: Priscilla W. Burton, Environmental Scientist III/Soils

RE: South Fork Portals Reclamation, Canyon Fuel Company, LLC., Skyline Mine, C/007/005, Task ID #1663

SUMMARY:

The amendment to reclaim the South Fork Portals for Mine #1 was received August 29, 2003 (Friday). The information indicates that 1,300 Tons of gob is proposed for reclamation of the portal. The application modifies pages 4-39a through 4-41 of the MRP and adds page 4-41a.

The application does not include analyses of the “gob” to be used as fill. A review of the last two years of analytical information on the gob transported to the waste rock site provides some information on the chemical characteristics likely to be attributed to the waste used in the backfill.

Reclamation Cross Sections South Fork Portals Dwg 4.6.5-1 was submitted with this application. The map shows the placement of waste against the three portals of the #1 Mine. MRP Map 2.2.7.7 shows the Mine #1 breakout portals in the South Fork of Eccles Creek. The MRP Mine #1 Portal Breakout map 3.2.11-1 shows the disturbed area associated with the South Fork break out portals. The acreage of disturbance is 0.96 acres (Table 4.7-7 of the MRP).

TECHNICAL ANALYSIS:

OPERATION PLAN

TECHNICAL MEMO

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

It is estimated that there will be 150 round trip truck trips up the canyon to transport the sediment from Electric Lake to be used in portal closure; two trips to transport blocks; and 100 trips to transport waste rock for fill (personal communication with Chris Hansen September 10, 2003).

Topsoil will be removed from the Dry Fork flat area that will be used as a passing area for transport trucks. The depth of salvage and placement of topsoil for storage is yet to be determined. Soil handling on the roadway between the portals and the knob should be addressed. I.E., some of the subsoil is stored along the roadway just downstream from the land bridge.

The plan seems to indicate that the “knob” of topsoil may not be utilized in reclamation of this project. Regulation R645-301-242 requires that the salvaged and stockpiled soils be redistributed within the permit area.

Findings:

The information provided is not adequate for the requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-231.100, (1) The application must include a description of topsoil salvage from the Dry Fork flat area. (2) Soil handling between the knob and the portals should be addressed in the narrative.

R645-301-244, The plan must indicate that topsoil stored at the mouth of the small canyon will all be used in reclamation of the disturbed area.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Refuse Piles

Section 4.16 of the MRP describes placement of underground development waste either in the mined out workings or at the Scofield Waste Rock site. Refuse that is transported to the Waste Rock site will be tested as outlined in Section 4.4.5 of the MRP. One sample will be taken for every 2,000 Tons hauled.

The application indicates that the waste to be used as backfill in the #1 Mines was sampled, but no results are available. During a site visit on September 9, 2003, Mr. Doug Johnson indicated that waste to be used as fill was mined in 1994 and stored underground until now.

The application should also indicate that there will be 450 cu yds of Electric Lake sediments that will be hauled to the site for backfill inside the portals. The application should account for the number of truck trips over the ancillary road.

The 1998 Annual Report contains a number of waste analyses and a topsoil analysis for comparison. The amount of waste transported to the Scofield Waste Rock site is not indicated in the Annual Report (nor are there any refuse pile certifications for the entire year). A review of the analyses indicates the following properties of the gob: sand classification with bulk density between 1.3 g/cc – 2.4 g/cc, SAR values 2.0 or less, and Electrical Conductivity values between 1.0 and 2.0 mmhos/cm. Soluble boron values are below 1 mg/kg. Selenium is between the limits of detection and 0.1 mg/kg (AB_DTPA method). As a whole, the waste has a neutral pH but little carbonate content (neutralization capacity); six samples collected in July and August 1998 were acid forming based on the total sulfur percent. When only pyritic sulfur was evaluated, however, the acid/base accounting returned to positive values.

Twelve samples taken of waste disposed at the Scofield Waste Rock site in 2002 reflect different characteristics. These samples represented 8,448 tons of waste transported in December of 2002. Overall, the material was characterized as a sandy loam and had ten times greater neutralization capacity than the 1998 samples. There were no elevated values of boron or selenium. Electrical conductivity values ranged from 1.82 to 6.44 mmhos/cm and SAR values were between 1.0 and 2.0.

If the waste brought to the South Fork Mine #1 breakout portals for fill is similar to that previously sampled, it will not pose a toxicity threat. The characteristics of the waste are as yet unknown, but the Permittee has committed to providing the Division with the analyses when they become available and covering the waste with five feet of substitute topsoil and topsoil.

TECHNICAL MEMO

Findings:

The information provided is not adequate for the requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-731.311, The results of the chemical analysis of the waste used as fill must be provided with the application.

R645-301-542.710, The application needs to indicate that there will be 450 cu yds of Electric Lake sediments that will be hauled to the site for backfill inside the portals.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Section 4.6.5 of the MRP describes the South Fork breakout and its reclamation. The three portals of Mine #1 shown on Mine #1 Portal Breakout, Map 3.2.11.1, will be reclaimed using 1,300 Tons of waste rock as fill underneath five feet of subsoil/topsoil (page 4-41 and Dwg 4.6.5-1).

Page 4-40 of the MRP details 2,840 cu yd topsoil and 2,840 cu yds subsoil were salvaged and stored on site. The Division calculates that there is 444 cu yds of topsoil stored along the road (600 ft x 4ft x 5 ft) upstream of the site. The remainder of the topsoil (2,400 cu yds) must be stored in the knob downstream from the site. The Division calculates that there is approximately 2,066 cu yds of subsoil stored in the land bridge. The remainder of the subsoil is stored along the roadway just downstream from the land bridge.

The MRP in Table 4.7-7 indicates that the South Fork Breakout encompasses 0.96 acres. This includes the portal area and the road downstream to knob and upstream to end of topsoil storage (personal communication with Chris Hansen on September 10, 2003). The ancillary road from the knob to the highway is not included but will be ripped and seeded on the way out (personal communication with Chris Hansen on September 10, 2003).

The Division calculates that the area to receive five feet of cover on the south fork portal pad is approximately 0.2 acres. To cover the 0.2-acre area with five feet of subsoil/topsoil will require about 1,000 cu yds of subsoil (three foot depth) and 645 cu yds of topsoil (two foot depth). The Permittee has enough stored topsoil and subsoil to accomplish this task. Replacement depths are requested.

After ripping in Dry Fork, topsoil will be replaced, and then the entire site will be gouged (personal communication with Chris Hansen on September 10, 2003). This information must be included in the application. And, the depth of ripping in Dry Fork area should be disclosed.

Terry R. Brotherson Excavating (Mount Pleasant) will conduct the work using twelve-yard (10 – wheel) dump trucks to haul the waste. A Sumatomo 200 trackhoe and a 3 yd rubber tire front-end loader will also be used at the site. A D-6 dozer will be used to respread topsoil and a Case 580 backhoe will be used for utility work. Keith Zobell will oversee the topsoil/subsoil handling and revegetation work (personal communication with Doug Johnson on September 9, 2003).

The location of the topsoil storage area should be returned to a foot trail (email communication from Tom Lloyd (U.S. Forest Service) September 11, 2003).

Findings:

The information provided is not adequate for the requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-241, The application must outline the area of disturbance (0.96 acres + Dry Fork) and the area to receive the topsoil/subsoil and the planned replacement depth for topsoil and subsoil.

R645-301-242.200, The application must describe plans for ripping (including depth of ripping) and gouging in the Dry Fork location.

R645-301-553, Backfilling and grading plans should indicate that the location of topsoil storage upstream of the portal site will be returned to a foot trail.

STABILIZATION OF SURFACE AREAS

TECHNICAL MEMO

Analysis:

The application indicates that the surface of the Mine #1 portal area will be gouged to a depth of one foot (page 4-41). The application indicates that the site will be gouged or raked (page 4-41a). The application does not indicate what areas will be raked as opposed to gouged. I.E., will the ancillary road from the knoll to the portals be gouged? Will the road/trail from the portals upstream be gouged?

The MRP in Section 4.7.8 (page 4-50) describes reseeding and mulching at the South Fork Breakout, except that current plans are to apply straw mulch rather than hydro mulch and broadcast instead of hydro seed (personal communication with Chris Hansen on September 10, 2003). Table 4.7-4 and Table 4.7-5 for Aspen (portals) and spruce and fir (roadway) seed mixes will be used on the site. Table 4.7-6 describes supplemental shrub planting for riparian zones to be used in addition to the south and north slope mixtures.

Gravel may be applied to roadways to a depth of three inches in select locations to minimize the offsite sediment transport (personal communication with Chris Hansen on September 10, 2003).

Findings:

The information provided is not adequate for the requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-244, Please provide a description of the rate of application of straw mulch and the extent of gouging versus ripping at the site and any other deviation from the approved planting methods described in Section 4.7, Table 4.7-4, Table 4.7-5 and Table 4.7-6.

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sec. 817.131, 817.132; R645-301-515, -301-541.

Analysis:

The application indicates that the mine will become idle early in 2004. Reclamation of the Mine #1 portals will secure these openings as required by R645-301-515.310.

Findings:

The reclamation work will secure the portal openings during temporary cessation.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Final Surface Configuration Maps

Reclamation Cross Sections South Fork Portals Dwg 4.6.5-1 was submitted with this application. The map shows the placement of waste against the three portals of the #1 Mine. Map 2.2.7.7 shows the Mine #1 breakout portals in the South Fork of Eccles Creek. The Mine #1 Portal Breakout, map 3.2.11-1 shows the 0.96 acre disturbed area of the South Fork break out portals, unfortunately this map has been lost from the Division's copy of the MRP.

The reclaimed slope will be a 2h:1v.

Reclamation Treatments Maps

None provided. A reclamation treatment map is recommended since the project management will be contracted out.

Findings:

The information provided does not meet the requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-121.100, R645-301-511.100, Please provide the Division with a copy of Plate 3.2.11-1 Mine #1 Portal Breakout Map showing the disturbed area and a reclamation treatment map showing areas of ripping and/or gouging, other sediment control, topsoil placement depths, seeding treatments, and area of transplanting.

RECOMMENDATIONS:

The information requested should be provided before the Division approves the reclamation plan for the South Fork Mine #1 portals.